REMARKS/ARGUMENTS

Reconsideration and allowance in view of the foregoing amendment and the following remarks are respectfully requested.

Claims 1-6 and 14 are now pending.

In the Examiner's Official Action of September 15, 2005, claims 1, 4 and 14 were rejected under 35 USC 102(b) as being anticipated by Yamada with or without the further evidence by Fujishiro et al. Further, claims 1 and 2 were rejected under 35 USC 102(b) as being anticipated by Ueno. Applicant respectfully traverses these rejections. However, to advance prosecution, claim 1 has been amended above to incorporate certain limitations of previously presented dependent claim 15 and claim 15 has been canceled. It is therefore respectfully submitted that the Examiner's rejections have mooted by the revision to claim 1 presented above. Likewise, the Examiner's rejections as set forth in paragraphs 12-19 of the Official Action have been mooted by the amendment to claim 1 presented above.

In the September 16, 2005 Official Action, claim 15 was rejected under 35 USC 103(a) as being unpatentable over Ueno in view of Mase et al. Applicant respectfully traverses this rejection.

At the outset it is respectfully submitted that the Examiner has mischaracterized Ueno. In this regard, referring to Ueno's disclosure, Ueno provides a heater 3, the heater being comprised of a heating element 25 embedded in an electrically insulating substrate 23 (column 4, lines 40-42). Thus, the Examiner's consideration as to how heating element 25 is incorporated in "insulating layer 3" is misdirected since element 3 is the heater in Ueno. Thus, Ueno teaches an oxygen sensor having a cell 1 and a heater 3. The cell 1 has a solid electrolyte body 5 of Y_2O_3-stabilized ZrO_2 (see column 2, lines 46-58). The heater 3 has an electrically insulating substrate 23 of $A1_2O_3$ and a heating element 25 (see column 4, lines 40-43). An adhesive is disposed on a surface

of a recess 230 of the substrate 23, the solid electrolyte body 5 of the cell 1 is disposed on the adhesive, and then the cell 1 and the heater 3 are baked at a temperature lower than a sintering temperature of the substrate 23, for example, 1100 to 1200 °C, thereby forming an intermediate layer 21 between the cell 1 and the heater 3. The intermediate layer 21 is not completely sintered, has a number of fine cracks of the order of μm, and presents an unglazed-like porcelain state (see column 4, lines 56-57).

Because the intermediate layer 21 is not completely sintered, the intermediate layer 21 placed between the solid electrolyte body 5 and the insulating substrate 23 of the heater 3 has no crystal phase and a heat transfer coefficient between the solid electrolyte body 5 and the insulating substrate 23 of the heater 3 becomes low. In this case, when the heater is attached to the solid electrolyte body 5 to transfer heat generated in the heater to the solid electrolyte body 5, a large thermal shock is given to the intermediate layer 21.

As noted above, claim 1 has been amended to specifically require that the heater be directly attached to a side surface of the insulating sheet to transfer heat generated in the heater to the insulating sheet and the solid electrolytic sheet. Claim 1 has further been revised to specify that the solid electrolytic sheet and the insulating sheet having the heater are laminated and sintered to be integrally bonded with each other and to obtain the crystal phase. This limitation is supported for example by page 14, lines 24-30 of applicant's specification. Because the solid electrolytic sheet laminated with the insulating sheet having a heater are sintered, material transfer occurs between the insulating sheet and the solid electrolytic sheet so as to tightly bond the sheets with each other (see page 18, lines 9-15). Therefore, this sintering apparently heightens a heat transfer coefficient between the solid electrolytic sheet and the insulating sheet, and generation of a large thermal shock between the sheets can be prevented.

Thus, in contrast to Ueno, in the present invention, because a crystal phase containing silicon dioxide intervenes between the solid electrolytic sheet and the

insulating sheet as a result of the sintering of these laminated sheets, heat transfer between the sheets is facilitated and heightened. Accordingly when heat is transferred from the heater, the generation of a large thermal shock between the sheets is prevented.

Importantly, as recited in amended claim 1, in an example embodiment of the invention, the heater is directly attached to the side surface of the insulating sheet which is not taught in Ueno. Even if the Examiner considers that Ueno may be provided with a heater that is a heating element 25 sandwiched between insulating layers, in view of Mase, the combination of claim 1 would still not be anticipated nor obvious. Indeed, even if there is direct contact between, e.g., heater element 25 and an "insulating layer", a crystal phase containing silicon dioxide is not provided between the insulating layer and the electrolyte body because of the presence of layer 21, which is not a crystal phase, and because the parts are not integrated by sintering.

It is also respectfully noted that, like Ueno's "heater 3", Mase teaches heaters that are a compound structure. More specifically, Mase discloses for example heater 22 comprised of a heating element 26 and a pair of ceramic layers 24 and also a heater 74 comprised of a heating element sandwiched between porous ceramic structures 72,76. Thus, "heater" does not refer in Ueno or Mase to the heating element *per se*, but the assembly that for example Ueno identifies with reference numeral 3 and that includes recess 230 having layer 21 interposed between it and the solid electrolyte body.

In view of the foregoing, and the clear teaching in Ueno of layer 21 (which is not a crystal phase), it is respectfully submitted that the invention of amended claim 1 is not anticipated by nor obvious from Ueno taken alone or in combination with Mase.

It is noted that claim 4 was not rejected based on Ueno and therefore with the amendment to claim 1 above it is respectfully submitted that claim 4 should now be allowed.

All objections and rejections having been addressed, it is respectfully submitted that the present application is in condition for allowance and an early Notice to that effect is earnestly solicited.

Respectfully submitted,

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